DOCUMENT RESUME

ED 309 764 IR 013 949

AUTHOR Buchanan, Harriette C.
TITLE Videotutoring at Appalachian State University.
PUB DATE 86
NOTE 17p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; Biology; *Closed Circuit Television; Higher Education; History; Mathematics Instruction; *Review (Reexamination); Student Attitudes; *Videotape Recordings
IDENTIFIERS *Appalachian State University NC; *High Risk Courses

ABSTRACT

Initiated in early 1986, the Videotutoring Program at Appalachian State University, Boone (North Carolina), has proved to be a valuable tool for instructors in certain high risk courses (such as biology, history, and mathematics) for providing supplementary tutorial assistance for their students. The program was developed and is coordinated by the Learning Assistance Program and is funded by the Faculty Development and Instructional Services Center at Appalachian. As it currently functions, the program enables instructors to tape test review sessions which are broadcast live, and then later rebroadcast at other times on Appalachian's closed circuit cable system. Plans are under way to broaden the scope of the program to include taping material to supplement "difficult concepts" that need more coverage than the instructor can fit into the course syllabus. Students have responded positively to this instructional assistance, reporting that they feel better about the course and the instructor. Their performance in the course tends to improve, sometimes by as much as one letter grade. Comments from five individual faculty members using videotutoring are attached. (5 references) (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED309764

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
X This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Harriette C. Buchanan
Learning Assistance Program
Appalachian State University
Boone, NC 28608
(704) 262-2291

Videotutoring at Appalachian State University

Abstract:

Initiated in early 1986, the Videotutoring Program at Appalachian State University, Boone, NC, has proven to be a valuable tool for instructors in certain high risk courses (such as biology, history, and mathematics) for providing supplementary, tutorial assistance for their students. The program was developed and is coordinated by the Learning Assistance Program and is funded by the Faculty Development and Instructional Services Center at Appalachian. As it currently functions, the program enables instructors to tape test review sessions which are broadcast live and then later rebroadcast at other times on Appalachian's closed circuit cable system. Plans are under way to broaden the scope of the program to include taping material to supplement "difficult concepts" that need more coverage than the instructor can fit into the course syllabus. Students have responded positively to this instructional assistance, reporting that they feel better about the course and the instructor. Their performance in the course tends to improve, sometimes by as much as one letter grade.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Harriette C.Buchanan
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR013949

Introduction:

This document will describe the Videotutoring Program at Appalachian State University. The Background statement will explain why the program was developed. The Description of the Project will outline the history of the program, indicate what the project does, how the project is carried out, who staffs it, who the target population and major audience are, describe the focus and scope of the project, indicate the goals and philosophy of the project, and indicate the present status of the project. The Results section will describe the program's results and effectiveness. Finally, the Conclusions and Recommendations section will indicate what conclusions have been drawn as a result of the project and will describe how the project could be modified for replication at other institutions.

The Videotutoring Program is unlike other video instructional vehicles that have been described in the literature. Most video instructional vehicles are geared more toward video courses and distance learning. Most of the literature focuses on Great Britain's Open University system which has been in existence for a longer time than other video-based instructional systems. In the United States, telecourses are the dominant instructional use of video. Videotutoring is different in that it is not designed to be a primary instructional vehicle; it is, rather, a supplement through which the instructor provides extra material for students that the students may or may not choose to use.

Background:

The Videotutoring Program came into being as a result of the combination of several pressing needs. The Learning Assistance Program at Appalachian, as one of its services to students, coordinates a campus-wide tutorial service. The tutor program is always swamped with requests for tutoring from students in what are high risk general education courses on our campus. The courses for which students request assistance most frequently are biology (the required laboratory science that the majority of our students take), history, and mathematics. Coupled with this very high demand for tutorial assistance, the Learning Assistance Program had the double problem of 1) not enough money to hire a sufficient number of tutors and 2) not a large enough pool of qualified tutors to meet the demand even if there were adequate funds.

Description of the Project:

The Videotutoring Program at Appalachian was developed in 1985 and initiated in the spring of 1986 in an effort to solve the problem of meeting the demand for tutorial assistance in high risk general education courses. The initial idea was one of those "Eureka" flashes of insight gained in the shower by Dr. Kay Smith, an instructor in the Learning Assistance Program. Mulling over the problem of satisfying demand for tutoring, she remembered that Appalachian had recently installed a system of coaxial cable in the instructional and residential buildings on the campus. This

"AppalNet" system provided a unique opportunity to deliver tutorial assistance, via cable television, to students in their residence halls and to engage the efforts of the best tutor of all, the course instructor, in a way that would be an effective use of the instructor's time.

Dr. Smith presented this idea to the Learning Assistance Program where it was warmly received although no one was sure how to organize and fund such an undertaking. The program did, however, become part of the Learning Assistance Program's long range plan. When its need became more pressing, Dr. Smith contacted Appalachian's Faculty Development and Instructional Services Center for assistance. This assistance came in the form of advice on the way to plan the project and of financial assistance to do the videotaping. The next step was to generate support from the departments in which the high risk courses were taught. As coordinator of the Videotutoring Project, Dr. Smith, accompanied by the coordinator of the university tutoring program, visited several of these departments and talked to the chairpersons and faculty. A pilot project was planned and was implemented in the spring of 1986 with the chairperson of the biology department, Dr. Jeffrey Butts, conducting a test review session which was broadcast "live" on the AppalNet system and rebroadcast several other times before the test.

This pilot program iniated Phase I of the Videotutoring Program, a system for doing test reviews--either for hour exams or for final examinations. Phase I operates by providing the instructor with the opportunity for doing the test review before a

group of students who may ask questions . This session is broadcast "live" on the AppalNet system and then rebroadcast at other times to be sure that all students have access to the session. The AppalNet closed circuit cable system allows students in the residence halls to view, in their own rooms, programs generated elsewhere on the campus. For students who live off campus, there are several sites on campus where television sets are available for their viewing. The instructor may opt for a follow up session in which students who have viewed the review session may call in with questions that are then answered "on the air" for the benefit of those students and others who may have questions. In the three years since the pilot program was initiated seven different instructors have used the system. While the number is small, the success is evidenced by the fact that those who use the program repeat their usage from semester to semester.

Phase I, the test review session, is interesting not only because it is a unique way to deliver test review material to students, but also because it is relatively easy and inexpensive to produce. The reviews are filmed with a small, portable, tripod mounted VHS Camcorder with a built-in microphone. This microphone is sometimes replaced by a lavalier or hand-held microphone. The session is filmed in a classroom with only slight modifications from the ordinary. This room has white boards that are written on with markers and has a pull-down screen for use with transparencies and an overhead projector. The room also has a telephone line for the call in sessions. The lighting from regular fluorescent lights is adequate so no special lighting arrangements are necessary.

Since the camera is so simple, a graduate assistant with a minimum of training can operate the technical details of the taping.

The test review sessions produced by Phase I of the Videotutoring Program have the advantage of being easy and inexpensive to produce. The instructor needs only to plan for the one review session and decide when the broadcasts will take place. The disadvantage of these tapes is that the quality of the tapes is not high. The sound is not of a high quality because of a "hum" from the flourescent lighting, and, especially after several replays, the colors are faded. The material is, however, adequately conveyed: information written on the white board with markers shows up well and material presented on transparencies with an overhead projector shows up surprisingly well. The students, whose primary interest is in obtaining the information on the tapes, overlook the fact that the quality of the picture and sound are not that of commercial television.

Phase II, which is still in the developmental stages, will focus on filming material which we are labeling "difficult concepts." By this we mean material that the instructor knows students have trouble with every semester, but for which s/he has only a limited class time. Making a video in which these concepts are covered in more depth will meet the students' need for extra instruction without requiring the instructor to give up precious class time. Another benefit the students will derive from Phase II is that of repetition. Since the concepts or problems that the instructor will be covering are difficult, many students cannot fully understand with only one exposure. While the tapes made in

Phase I usually have value for only a short time period and are not always used again after the first few showings, the tapes made for Phase II will be planned to be used for several terms, perhaps for many years.

Making tapes for Phase II will require considerably more time for planning and scripting than for the test review tapes. This is the main reason that none have been made yet; all of the instructors who have made test review sessions are keenly interested in pursuing Phase II, but none have been able to take time from their busy schedules to do the requisite planning. We have submitted a proposal to the Faculty Development and Instructional Services Center which will provide extra pay for faculty who are able to work during the period between the end of the spring semester and the beginning of summer school. With this extra paid time, faculty will have the incentive they need to do the planning and scripting for the difficult concepts tapes that they wish to make. In order to obtain a higher quality tape than the VHS tapes produced in the test reviews, these tapes will be made in a studio setting on 3/4 inch tape so that a higher quality tape will result. This higher quality tape will also hold up under repeated showings better than the VHS tape.

The staffing for the Videotutoring Program consists of the volunteer efforts of the Coordinator, Dr. Harriette C. Buchanan whose full-time duties are as an instructor for the Learning Assistance Program, and of the faculty who conduct the sessions. In addition, the taping is done by a graduate assistant who works part-time for the Faculty Development and Instructional

Services Center. This graduate assistant is also responsible for running the tapes at the times requested by the instructors.

The target population and major audience for the program are the students who can benefit from the extra tutorial assistance that the review and difficult concepts tapes can provide. One extra benefit that this audience receives is having the opportunity to view the material several times. For many of the students who need the tutorial assistance, repetition is a key to better learning and this program allows that. Tapes are available for check out at times when they are not being broadcast, and some students report that they record the session on their own tape so that they can view it at will, pausing and/or rerunning as needed.

The focus and scope of the Videotutoring Program are fairly limited because the system is designed to supplement, not replace, regular classroom instruction. As we have time and interest from faculty members, we are prepared to expand the scope of the program to include other ideas and materials. Our primary limitations now are time, funds to develop creative video methods for delivering instructional assistance, and lack of imaginative ideas about how to employ effective video instructional tools. Videotutoring works best for instruction that is delivered primarily through lecture or demonstration. If the students need to participate more actively in the learning situation, as they would in a science laboratory for example, Videotutoring would not be as effective because it does not allow for the students to learn experientially. What the focus and scope do extremely well are to allow the student, especially the student in a large lecture

course, to have the sense of being addressed directly and at a closer range by the instructor. The talking head that comes across on the television set may more effectively reach the students who prefer to sit in the back of the classroom. The visuals that the instructor chooses to use are more immediately visible on the television screen than from the back of a large lecture hall.

Videotutoring operates under the philosophy that the best tutor for any course is the course instructor. As the individual conducting a test review or designing an explanation of a difficult concept, the instructor knows what s/he wishes to focus on in the instructional material and has a strong enough sense of the interests and abilities of the students to present the material in the most effective manner. This philosophy supports the program goal of enabling the instructor to develop instructional materials that deliver accurate information to the students in a timely fashion. Videotutoring seeks to facilitate bringing the instructor and the students closer together to achieve the instructor's instructional goals and objectives for the students. The program also has as a goal making the tutorial assistance that is being provided as accessible to the students as possible. Prior to utilizing the program, most of the instructors who have used the system held review sessions, but these sessions were not always well attended because students frequently had other committments for the time during which the session was scheduled. Videotutoring broadens the access by broadcasting the sessions at various times so that most of the students can avail themselves of the assistance being provided by their instructor. The AppalNet system also

increases the accessibility because the cable connections exist not only in classrooms but in residence hall rooms so the students may watch in the comfort of their own rooms.

The present status of the program consists of continuing Phase I, test reviews, at the request of the instructors. The utilization of this aspect of the program is slowly growing as instructors learn about the system from other instructors and from students. We are gradually developing Phase II with the planning for a small group to work together to produce plans and scripts for "difficult concepts" tapes. Another aspect of Phase II that we are initiating for the fall semester of 1989 is the production of tapes and related print materials for use in Freshman Seminar classes to help students learn how to recognize and take effective notes from different teaching styles. Videotutoring is slowly growing and developing in slightly different directions as instructional needs are identified and video assisted solutions occur as the answers.

Results:

The results of the Videotutoring Program are overwhelmingly positive in the affective domain. After he had made the pilot program, Dr. Butts viewed the tape and was terribly disappointed. He saw that the lighting was not perfect and heard that the sound was a bit fuzzy. He decided that it was "a disaster" and that he would not repeat the experiment. His students, however, reported that they loved it. The problems that had distressed Dr. Butts did not bother them at all because their

objective was to have the professor explain problems to them and to get a better understanding of what was likely to be on the test. With the students' encouragement, Dr. Butts made subsequent tapes of review sessions and has now come to the conclusion that Videotutoring is one of the best instructional tools he has ever used. Dr. Butts' conclusion is that the generation of students raised on Sesame Street expect to use television as an educational medium. Since learning is their objective, tape quality does not necessarily need to be high. Dr. Butts has also begun to have Appalachian's Film Library show, over AppalNet, some of the Nova programs that the university has bought and to require the students to watch the programs, just as he requires them to read materials on reserve in the library.

Initially, Dr. Butts saw little or no cognitive gain from the pilot program. Evidence of the program's cognitive impact has, over a period of several years and with data from other instructors who have used the system, shown gains. Students who actively participate show as much as a letter grade gain in their scores on tests. Results are still being gathered and should become more conclusive over time.

The results are developed through a combination of an evaluation instrument that asks students how many times they watched the review sessions and that has space for them to write their comments, both positive and negative. Student grades are averaged, but, since the evaluation checklists are anonymous, there is no way to correlate participation with individual grades in the class. The checklists do indicate, however, that from 75-80 % of a

class will watch a Videotutoring session at least once, a tremendous increase over the 20 % or so of students who are able to attend the "live" review session. The affective gains from Videotutoring would justify the continuation of the program even if the evidence of cognitive gains were not increasing at an encouraging rate.

Conclusions and Recommendations:

Results so far indicate that Videotutoring is a highly effective tool for instructional supplement. The evidence on the cognitive gains suggests that if the students participate more actively they make stronger gains. We could make the program more effective by encouraging instructors to design their sessions to include some activities to which the students could actively respond rather than merely passively watching the screen. The instructor could, for example, ask questions or pose word problems and wait for a few seconds for students to write their own answers or solutions before providing the "right" answers for the students to check their work. Another possibility would be to encourage more "phone-in" interaction or follow up sessions so that students in the "live" audience and in the viewing audience would be encouraged to participate more actively. Instructors could also suggest alternate or follow up activities that the students could develop to apply the concepts being covered or reviewed in the sessions. All of these are suggestions for increasing what seems

to be a central aspect of making the system more effective: encouraging a higher degree of student participation and reaction.

Other recommendations include ways in which Videotutoring could be used in settings other than the Appalachian State University campus with its AppalNet system. Even if an institution does not have a closed circuit cable system, tapes could be made and then duplicated to have a sufficient number for students to check out for home use or for use in a learning laboratory equipped with video viewing facilities. Perhaps agreements could be worked out with local commercial cable companies for access to some of their public service time or channels. In this way video materials produced locally for tutorial or instructional assistance could be made available to many students.

The major conclusions about Videotutoring as a pedagogical tool support the assertion that a small extra effort on the instructor's part results in strong affective gains in how the students feel about the instructor and about the class that that instructor teaches. Students who engage in the program actively by watching the material attentively and perhaps several times experience cognitive gains. Videotutoring is, therefore, a valuable tool that enhances the instructor's efforts to reach as many of the students in a class as possible and to a depth that the limitations of classroom time will not allow. In our search for instructional effectiveness, Videotutoring provides us with another channel through which to communicate with students.

Harriette C. Buchanan
Learning Assistance Program
Appalachian State University

Videotutoring: Annotated Bibliography

Bates, Anthony W. "Adult Learning from Educational Television: The Open University Experience," in Learning From Television: Psychological and Educational Research, ed. Michael J. A. Howe. London: Academic Press, 1983.

This essay develops theories of distributional, social, control, and symbolic characteristics of television video technology in Great Britain's Open University. Useful for theory and most applicable for institutions, such as community colleges, with adult learners who live at a distance from the campus.

Elliott, Geoff. Video Production in Education and Training. London: Croom Helm, 1984.

Concrete, how-to information about technical aspects and problems of producing video materials. Chapter topics include program production, camera techniques, presentation techniques, and post-production concerns.

Lonergan, Jack. Video in Language Teaching. Cambridge: Cambridge University Press, 1984.

Although much of the content is geared for foreign language instruction, this book contains several highly useful chapters, written for the novice, on how to produce simple video materials.

Moss, Robin. Video: The Educational Challenge. London: Croom Helm, 1983.

Geared to Great Britain's Open University, this book provides theoretical background on the uses of video media in communication and education.

Zuber-Skerritt, Ortrun, ed. Video in Higher Education. London: Kogan Page, 1984.

This collection of research based essays presents various rationales, applications, and implications for the use of video materials in divedrse aspects of education.

Harriette C. Buchanan
Learning Assistance Program
Appalachian State University

REPORTS FROM INDIVIDUAL FACULTY USING VIDEOTUTORING

Dr. Jeffrey Butts, Chairman, Biology Department

"I've never done anything as a teacher that has met with such a uniformly positive student response."

Dr. Butts feels that, while students' grades are not appreciably better, their attitudes are much better. He has also observed that more students (75% either attend the session in person, watch on television, or both) now participate in the review opportunities before exams. Some of his students even have reported that they record the sessions on their own VCRs so that they may re-view the sessions at their convenience. Because this student response is so positive, he plans to continue using the service.

Dr. Butts also plans to widen his video usage by identifying and purchasing supplemental instructional materials that students would watch on Appalnet as part of their out of class assignments.

Dr. Anita Kitchens, Mathematics Department

"Videotutoring is really helpful for review sessions that take longer than one class period."

Dr. Kitchens uses Videotutoring for review for the final exam in Developmental Mathematics (Math 0010). The chief benefit to her students is the ability to view the one hour and forty minute review session several times. She also appreciates being able to use the same review session more than one semester, thereby saving not only class time for doing the review but also saving her preparation time for the usual review process. She also reports that many students in the Algebra and Trigonometry class (Math 1020) say they benefit from watching the Math 0010 review session in preparation for their exams.

Dr. Peter Petschauer, History Department

"My expectations and the students' anticipations are now more equal."

Dr. Petschauer reports that students benefit from the Videotutoring sessions because they help them prepare more effectively for exams. Their improved grades seem to be the result of better use of study time. They also like the ease of simply turning on the television set and the benefit of viewing the sessions more than once. Another benefit he appreciates is being able to ensure that all students, even though they are in different sections of the same course, receive the same preparatory material.

Overall, he feels student response is so positive that it justifies his continuing to go to the trouble of preparing the sessions.

A hidden benefit Dr. Petschauer discovered is the value of viewing his own tapes to identify delivery strategies that need changing. As a result of doing this he has made several changes that he feels have improved his teaching style.

Dr. Matthew Rowe, Biology Department

"At first I was skeptical about Videotutoring, thinking it would cater to the lazy student, but the value the service has for the majority of students encourages me to keep doing it."

Dr. Rowe reports that in the first year, students who participated in the Videotutoring performed a letter grade better on exams than those who did not. That there is no such difference in the second year he attributes to the fact that the few who did not participate are probably the ones who already feel comfortable with the material and would do well anyway. An interesting coincidence for which he cannot account is that, since he has been doing Videotutoring, live attendance at the review sessions has risen.

Mr. Ray Williams, Biology Department

"Students always respond well and express an overwhelming desire for me to do the sessions."

Mr. Williams feels Videotutoring is an easy way to manage review, both for him and for the students. Students even like the system when tight scheduling prevents him from having a live audience; the review of the concepts is more important than interaction with an audience. Williams especially appreciates the flexibility for times in showing the tapes on Appalnet and for having those tapes available in the library for students who are unable to watch at the scheduled times to watch in the library.